

**REMARKS**

The status of the claims is as follows.

Claims 1-10, 12, 14, 18, 19, 23-31, 36, 39, 42, 43, 45, 46, 54, 56, 59-63, 65-67, 70-81,  
87-89 (Currently Amended)

Claims 11, 13, 16, 17, 20, 32-35, 47-50, 82-85, 90, and 91 (Original)

Claim 15, 21, 22, 37, 38, 40, 41, 44, 51-53, 55, 57, 58, 64, 68, 69, and 86 (Canceled)

As a result of the foregoing Amendments, the following claims remain pending in the application: 1-14, 16-20, 23-36, 39, 42, 43, 45-50, 54, 56, 58-63, 65-67, 70-85, and 87-91.

**Drawings**

The Examiner has objected to the drawings because Fig. 1 contains notations that are too small to read. The Examiner has further stated that Figs. 4-23 are missing from the disclosure. Applicant has submitted with this response a complete set of the drawings for this patent application. These drawings were filed with Application No. 09/652,412 filed on August 31, 2000 which was pending at the time of filing of the present application and which is the parent application of the present application as indicated in the continuing application data of the present application. These drawings

were incorporated by reference into the present application at the time of filing.

Applicant respectfully submits the drawings in this response overcome the Examiner's objections.

#### **Oath/Declaration**

The Examiner has objected to the oath/declaration because the citizenship of each inventor was not identified. Applicant has obtained a new oath/declaration to correct the deficiency identified by the Examiner and has submitted the new oath/declaration with this response.

#### **Objections to the Specification**

The Examiner has objected to the specification because some references do not refer correctly to the drawings. As indicated above, Applicant has submitted with this response a complete set of drawings for Figs. 1-23. Applicant respectfully submits the drawings submitted with this response correspond to the specification and overcome the Examiner's objections. Applicant has further amended the specification to correct the informalities noted by the Examiner. Applicant respectfully submits the amended specification overcomes the Examiner's objections.

#### **Claim Rejections Under 35 U.S.C. § 112**

The Examiner has rejected claims 18, 23-25, 36, 47-53, 54-63, 67-71, and 89-91 under 35 U.S.C. § 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. It is the Examiner's position that Applicant's invention requires a seeker, filter, and viewer.

Applicant respectfully submits that the present invention does not specifically require seeker, filter, and viewer components as suggested by the Examiner. Instead, as indicated on pg. 5, ll. 14-15, the present invention is an architecture for acquisition, exploration, and selection of choice candidates. In an example embodiment of the invention, the architecture comprises seeker, filter, and viewer components. The seeker component provides candidates, the viewer component may be used to explore candidates, and the filter and/or viewer components may be used at different times to assist in the selection of choice candidates. Applicant respectfully submits that because the present invention is an architecture for acquisition, exploration, and selection of candidates, rather than seeker, filter, and viewer components, the presence of a seeker, filter, and viewer component is not required for all embodiments of the invention.

Applicant states on pg. 49, ll. 7-10 that candidates may be provided by a database of candidates rather than generated by a seeker. Applicant further states on pg. 16, ll. 2-5, "even when the number of alternatives is small, the Filter-Viewer combination may be very useful to reduce the alternatives to an even smaller number." Applicant respectfully submits therefore, that the presence of the seeker is not required. Applicant further respectfully submits that for small design spaces, a filter may not be required. Applicant respectfully submits the present invention is an architecture for acquisition, exploration, and selection of candidates and any combination of components that support acquisition, exploration, and selection of candidates patentably define the present invention. Applicant further notes that amended independent claims 1, 18, 36, 72, and 89 recite a seeker, filter, and viewer component.

The Examiner has further rejected claims 22, 51, 69, and 86 under 35 U.S.C. § 112, first paragraph, as failing to comply with the enablement requirement. Applicant has canceled claims 22, 51, 69, and 86. Applicant respectfully submits the cancellation of these claims overcomes the Examiner's rejections.

**Claim Rejections Under 35 U.S.C. § 102**

The Examiner has rejected claims 1-91 as being anticipated by Amado. It is the Examiner's position Adamo discloses a seeker for providing a plurality of candidates, a filter for selecting a subset of candidates from a plurality of candidates, and a viewer for displaying a subset of candidates and enabling narrowing of the subset of candidates. Applicant has amended claims 1, 18, 36, 54, 72, and 89 to indicate that candidates according to the present invention are evaluated according to a plurality of evaluation criteria before being passed to a filter. Applicant has further amended claims 1, 36, 72, and 89 to include a filter that uses a form of dominance to exclude from a subset of candidates each candidate that is inferior to any other candidate. Finally, Applicant has amended claims 1, 18, 54, 72, and 89 to include a viewer that displays linked scatterplots of candidates. In view of Applicant's amended claims, Applicant respectfully traverses the rejections.

With respect to claims 1, 18, 54, and 72, it is the Examiner's position that Adamo teaches candidates by teaching a database with information retrieved from different sources. Col. 32, ll. 4-5. The Examiner further states that Adamo teaches providing candidates by generating candidates using components from a device library. Col. 32,

II. 18-31. Finally, the Examiner states that devices in a library equate to data in a database.

Applicant respectfully submits that the passages of Adamo cited by the Examiner teach a database and analysis of data in the database to “generate diagnostics” related to the data. Adamo teaches at Col. 32, ll. 22-24 “[i]f ... the databases contain financial information and financial ratios, the logical tests at the second step described before will *generate the diagnostics* associated to those financial ratios.” The logical tests are if-then-else tests.

In contrast to the logical if-then-else tests for generating diagnostics as taught by Adamo, the present invention obtains candidates by generating and evaluating them according to a plurality of evaluation criteria. On pg. 16, ll. 5-13 of the present application, the process for obtaining candidates by evaluating them according to a plurality of evaluation criteria is explained. In an example related to design of vehicles, an important aspect of performance may be the maximum vehicle weight. As suggested in this passage of the application, the total number of candidates generated may be 2,152,698 (representing all possible combinations of components for the vehicles). However, when the plurality of candidates is evaluated according to a specified evaluation criterion (e.g., maximum vehicle weight) the number of candidates remaining may be reduced significantly (e.g., to 1,796,025). In other words, candidates that fail to meet the evaluation criteria are eliminated and are not passed to the filter.

Applicant respectfully submits that claims 1, 18, 36, 54, 72, and 89 indicate clearly that candidates according to the present invention are evaluated according to a

plurality of evaluation criteria and therefore, are not simply items from a database that are analyzed using if-then-else logic to generate new type of unrelated data as taught by Adamo. Candidates are evaluated according to evaluation criteria before being passed to a filter. Applicant respectfully submits that Adamo's application of if-then-else tests to data in order to generate new diagnostic data does not relate in any way to candidates evaluated according to evaluation criteria, and therefore, does not anticipate independent claims 1, 18, 36, 54, 72, and 89. Because Adamo fails to teach or even suggest the evaluation of candidates, it does not anticipate the claims which depend from claims 1, 18, 36, 54, 72, and 89.

With respect to claims 1, 36, 54, and 72, it is the Examiner's position that Adamo teaches filtering based on the application of logical if-then-else tests to data from a database. Col. 32, ll. 6-7. Applicant has amended claims 1, 36, 72, and 89 to include a filter that uses a form of dominance to exclude from a subset of candidates each candidate that is inferior to any other candidate. As indicated in Applicant's specification on pg. 8, ll. 14-18, a first candidate is superior to a second candidate if the attributes for every criterion of evaluation of the first candidate are greater or equal to the attributes for every criterion of evaluation of the second candidate and the attribute for at least one criterion of evaluation of the first candidate is strictly greater than the corresponding attribute for the second candidate.

In the vehicle design example, a designer may designate as criteria of evaluation the top speed and the gas mileage for each proposed candidate of a vehicle. A higher top speed and better gas mileage is considered a superior design. When filtering is

applied to the evaluated candidates, a first candidate that has a top speed that is lower than the top speed of the second candidate and a gas mileage that is lower than the gas mileage of the second candidate is inferior (because the second candidate is better on every criterion of evaluation-i.e., the higher top speed and the higher gas mileage) and would be excluded from the subset of candidates. However, if the first candidate has a top speed that is higher than the top speed of the second candidate and a gas mileage that is lower than the gas mileage of the second candidate, then neither candidate is considered inferior to the other candidate and neither candidate would be excluded by the filter. Applicant respectfully submits that Adamo simply does not teach filtering of candidates as taught by Applicant and therefore, Adamo does not anticipate claims 1, 36, 54, or 72 and therefore, does not anticipate the claims which depend from claims 1, 36, 54, or 72.

Applicant has further amended claims 1, 18, 54, 72, and 89 to include a viewer that displays linked scatterplots. Linked scatterplots according to the present invention allow a user to view in a first scatterplot a plurality of candidates according to a first pair of criteria of evaluation. A plurality of candidates according to a second pair of criteria of evaluation may be displayed in a second scatterplot. That is, each scatterplot is a two dimensional display showing the alternatives with respect to two criteria. The scatterplots are linked so that when the user selects a subset of candidates in the first scatterplot, the same candidates in the second scatterplot are distinguished (e.g., by highlighting them in another color). The feature of linked scatterplots allows the user to select candidates with respect to any one or two criteria and see instantly how they fare

with respect to the other criteria (e.g., gas mileage and top speed v. total weight and highway range). In other words, the user may consider various trade-offs in the choices he is considering. Applicant respectfully submits that the feature of linked scatterplots is neither disclosed nor suggested by Adamo and therefore, Adamo cannot support the present rejections.

**Conclusion**

Applicant has amended independent claims 1, 18, 36, 54, 72, and 89 to indicate that candidates according to the present invention are evaluated according to a plurality of evaluation criteria. Applicant has amended claims 1, 36, 72, and 89 to include a filter that uses dominance to exclude from a subset of candidates each candidate that is inferior to any other candidate. Finally, Applicant has amended claims 1, 18, 54, 72, and 89 to include a viewer that supports linked scatterplots. In view of the foregoing claim amendments and accompanying remarks, the Applicant respectfully submits that the present application is properly in condition for allowance.

Respectfully submitted,

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